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Results of investigations into acquired vs. inherent differences between boys and girls were presented. Findings revealed that differences between boys and girls were affected by the attitudes of their schools toward them and toward education in general.

Sex differences in basic intellectual capacity, achievement, and problem-solving ability appeared to be relatively slight. Girls presented a stronger image of positive identification with the school and indicated more concern with achieving, being acknowledged, and receiving reward. Girls were more imaginative, more willing to share fantasies and to explore areas of personal concern.

Orientation toward different life stages was greater for girls, who were concerned with their teen-age or adult social sex roles. Affirmation of sex membership was strong for both girls and boys, although girls were more centrally concerned with people. Family matters concerned girls more, and they projected an adult world in which they were more secure and accepted.

The traditional cultural images of maleness and femaleness were most clearly expressed by the children in traditional schools. Modern schools tended to make fewer assumptions that skills, qualities, and orientations, traditionally considered sex-linked and sex-appropriate, were necessarily so.

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EMERGENT PATTERNS OF SEX DIFFERENCE IN A STUDY OF CHILDREN[1]

Patricia Minuchin

In this paper, I propose to review the patterns of sex difference derived from a rather comprehensive study of 105 nine-year-old children: 57 boys, 48 girls. The study was primarily geared to assessing the psychological impact of differing school experiences, defining psychological impact with sufficient breadth to include cognitive functioning, interpersonal orientation and aspects of self-image (1, 11).

From the beginning of this study we were interested in the general age level and in the comparison of boy-girl functioning, as well as school differences. It was nonetheless an impressive experience to watch the consistency with which sex differences emerged in our data, an experience shared by other researchers. Our thinking began to change -- and at this point the factor of sex not only has major status in considering the data, but we have come to think, in part at least, in terms of the impact of different school experience on boys and on girls.

In the bulk of this paper, I will present the findings on a general level of sex comparison, as if we had worked with a random group of 57 boys and 48 girls. Probably many of the findings reported in these terms have general validity for many middle class children in this culture. Let me anticipate a major thesis of the paper, however, by noting that many of these findings appear differentially in the different school groups. There are

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aspects where sex differences appear within a particular school atmosphere, though in general the sexes are comparable; other aspects where sex differences are carried primarily within some groups, hardly at all in others. Certainly research is beginning to document the observation that sex-appropriate or sex-typed behavior is not immutable, that it is different in different cultures, in different social classes, etc. (3, 12). Our findings suggest that the development of differential patterns in the behavior of boys and girls is probably affected by the implicit attitudes of their schools toward boys and girls and toward education in general, and in this there is variability within the middle class. In the last section of the paper I will offer some illustrative findings of differential patterns in the boys and girls of modern and traditional schools.

Before launching into the survey of general sex differences let me note a few background facts: first, that all analyses were done on masked protocols, so that raters knew neither the school nor the sex of any child; second, that with rare exceptions, material has been analyzed through Analysis of Variance for school and sex differences; third, that the material I draw on comes from over 15 test techniques and involves close to 100 scores and ratings; obviously, therefore, the presentation will not deal in detail with any specifics of technique or analysis.

Let me go now to the area of cognitive functioning, reviewing first the formal measures of intelligence, achievement and problem solving:

The basic intellectual ability of these children is high, and the boys and girls appear to be generally equivalent. On the Kuhlmann Anderson, the girls average an IQ of 120, the boys an IQ of 118; on the Performance Scale of the WISC, the girls average 115, the boys 116. Clearly there are no overall sex differences. There are trends of difference in the WISC subtests, however. Girls are more successful at the Coding ($p < .05$) and boys at Object Assembly

($p < .05$). If we stop to consider what is required in these tasks, such differences are consistent with a kind of psychological "common sense," in terms of the facility with puzzles and manipulation of materials we generally associate with boys, and the diligence, patient acceptance and smooth coordination we more readily associate with girls.

Achievement tests indicate an equivalent level of achieved and available knowledge. Five subtests of the Stanford Achievement battery were administered: word meaning, paragraph meaning, arithmetic reasoning, science, social studies. There are no significant differences in the performance of boys and girls on any of the subtests, and on the overall score their means are almost identical.

When we consider performance on a series of problem solving techniques, there is again no overall distinction. We presented the children with four problems, created and adapted for this age level.[1] They called for resourcefulness, restructuring and flexibility, fluidity of thinking, processing and utilization of data. The child's response to each problem was scored for success of solution and rated also on the nature of the problem solving process. In the ability to solve the problems successfully, the boys and girls were comparable, showing no significant differences on any of the four techniques nor on the composite score derived from a combination of the four.

The rating of the problem solving process involved a more complex variable. Here we were concerned with the extent to which the child tended to search for relationships, implications, conditional factors, in the process of understanding and attempting to solve. The response to each technique was rated separately, and a consensus score, based on all four techniques, was also derived. In this quality of search, the boys and girls are again generally equivalent. There are no significant differences between sexes either on the general

1. Problems were adapted from the work of Guilford (4), Werner and Kaplan (15), Saugstad (13), and, indirectly, Vigotsky.

rating or on three of the specific techniques. On one technique, the boys show more evidence of such processes than the girls ($p < .05$). This technique, based on the work of Saugstad (13), is called the Cylinder Problem. It requires that the child figure out a way to remove a cylinder from a close-fitting container, and it calls, more than the other problems, for some use of scientific principles, at a simple level, and for the conceptual and actual manipulation of tools and objects. Perhaps it calls not only for experience but a sense of comfort in thinking about and working with tools like screwdrivers, magnets, pliers, etc. It may be fairly reasonable that this, among the several techniques, should show an overall sex difference in process, favoring boys.

In general, however, the roster of sex differences in basic intellectual capacity, achievement, and problem solving ability appears to be relatively slight. A closer inspection of the findings within the different kinds of schools indicates that this is not strictly so; the pattern of similarities and differences between sexes varies somewhat within schools, and I will discuss this briefly later. It is still important to note, however, that there are almost no general sex differences on these classic measures of cognitive ability and functioning. It is of special interest for two reasons: first, because of general research findings (7, 10, 14), which suggest that boys are better problem solvers than girls, especially where the problems, like ours, involve restructuring, articulation, etc.; second, because we have found that in other facets of thinking style, perception, reactivity, there are recurrent distinctions between the boys and girls of this total group.

If we consider now <u>not</u> the level of actual performance, but attitudes and qualities related to achievement, to the sense of competence as a student, and to school in general, we do find sex differences. The girls in their story

telling fantasies (CPST) show a more recurrent involvement with achievement ($p < .05$) defining this variable within the general rubric offered by McClelland and Atkinson (8) in their research. Whether to consider this as evidence of a greater need and concern or as evidence of a greater willingness to share this fantasy is unclear, but it is at any rate more prevalent among girls. There is also some indication through fantasy materials -- though only at suggestive levels -- that the girls as a group are more dependent on external standards to evaluate their adequacy in regard to learning and academic accomplishment, a suggestive finding consistent with other research (5, 7, 16). They tend also to be more positively and actively identified with their schools though this is a trend seen only in the three public schools, reversing in the modern private school (sex by school interaction $p < .05$). In evaluating their own competence in school, however, on a self-scaling technique (the Stick-Figure Scale) it was the boys who more confidently described themselves as good in their school work ($p < .05$), though neither our achievement tests nor the available school grades suggest objectively that the boys are clearly more successful academically than the girls.

In general, then, there is a somewhat different constellation of confidence and concern in regard to schooling and to ability and achievement: the girls present a generally stronger image of positive identification with the school, and indicate more concern with achieving and being acknowledged and rewarded; the boys present a stronger statement of confidence in their personal adequacy as students.

Perhaps it is not a great step from the implications of these findings to note next a clear difference between the boys and girls in the general quality of responsiveness to our test battery -- a difference which can be reported both as qualitative impression and as quantitative finding.

In understanding this difference, we might regard the several test and interview sessions with each child as a complex: they represent intellectual challenge; they are interpersonal, involving the child with an adult; and they occur in a school setting. Within this complex, the girls gave a qualitative impression of greater involvement and open responsiveness, and they were, in fact, clearly more productive. They told fuller stories on the CPST, our version of the TAT ($p < .01$); dictated longer letters describing themselves and their lives ($p < .05$); produced more ideas when asked about using common objects in unusual ways ($p < .05$); perceived more concepts on the Rorschach ($p < .05$) -- all at statistically significant levels. They also had somewhat less tendency to reject items than the boys. Aside from whatever verbal facility may be involved, it seems possible that the differential reaction of boys and girls to the testing sessions may stem from different feelings about school-related activities, about producing and sharing, about people in general, and perhaps about producing and sharing with the unfamiliar, inevitably probing, adult interviewers in particular.

The fact of greater productivity on the part of the girls is accompanied by a qualitative difference in the kind of material produced, particularly in situations that call for fantasy, or for personal investment or content. The girls are consistently more imaginative. CPST stories -- rated for imagination on the basis of the child's tendency to transcend the stimulus and invest the story with people, elaborations, feelings -- indicate a clear sex difference ($p < .01$). When we showed the children reproductions of paintings, mostly from the modern era, and asked, among other things, that they create a title for each one, the girls' titles were significantly less descriptive and more imaginative ($p < .05$). Play session data, also rated at several levels for imaginative qualities, generally supported this trend, though not at statistically significant levels.

Perhaps the consistent difference in imaginative thinking should be thought of not only as evidence that girls are more willing to share fantasies and explore personal realms, but also as evidence of a rather different development of particular cognitive qualities in boys and girls. They are in effect showing a different style in their way of thinking and coping with certain kinds of tasks. In this connection, it is of interest to note other aspects of our data, which suggest a more personalized reactivity on the part of the girls when they handle the semi-projective task of writing a letter ($p < .05$) and a more differentiated quality, seen in several techniques, in the way they think about themselves and about people in general. I will cover this material later, but I mention it here as part of a general constellation of sex differences in aspects of cognitive style and strength.

I would like to turn now to other areas of psychological functioning and expression -- measures that touch on the way in which the children perceive and present themselves and the way in which they perceive other people.

First -- aspects of self-image and feeling:

In the strength and confidence with which the boys and girls present themselves there are sex differences -- though diametrically opposite, depending on the level of presentation. In conscious, verbal, self-evaluations (Stick-Figure Scale), where the children were asked to scale themselves regarding popularity with peers, competence in school work, satisfaction with sex membership and the feeling of a good and lucky life, the boys present a stronger, more confident and satisfied picture -- significantly different in the total syndrome and for all aspects except one -- the "good and lucky life" (all except "lucky life" $p < .05$ or $< .01$). "I'm all right" and "All's all right" is more characteristic of the boys, with the girls more hesitant and questioning.

The less consciously controlled presentation represented by drawings of the human figure shows opposite results. The girls' drawings are rated in general as stronger ($p < .05$). They use more color ($p < .05$); their drawings are significantly larger ($p < .05$), more detailed in general and in facial expression, and are more open in perspective, since the boys tend significantly more toward profile drawings ($p < .01$), which have presumed significance as relatively evasive and hidden presentations (8).

Why different evidence from the two techniques? Probably several factors are relevant. The level of consciousness may matter. There may be some denial and bravado in the boys' verbal presentation of themselves that is thrown into relief by their drawings. The more critical presentation of the girls, on a verbal level, may not stem completely from low self-acceptance, but may reflect partly a greater freedom to question, partly a stronger internalized sanction against evaluating themselves boldly and favorably. The culture calls for verbal modesty from girls, confidence from boys. Probably also the kind of task makes a difference. The girls as a group seem to enjoy the drawing and its decorative aspects more, and the whole matter of personal, bodily display may be more acceptable to them. Here the culture's attitude works the other way: it is the girls who are admired for the way they look and visually present themselves. Lastly, certain stylistic qualities may operate consistently in the two tasks but create different impressions. The girls in our sample tend to take a more differentiated approach to many tasks -- especially where they involve human aspects. In the drawings, elaboration of detail, articulation of parts, etc. contributes to the impression of a more differentiated and stronger presentation of the self; in the verbal self-evaluations, the consideration of exceptions, limiting conditions, etc. contributes to a sense of less strong and sure presentation of the self.

Taken together, the findings from the two techniques suggest that there is some conflict and flux in self-presentation for both boys and girls; that they may, however, have different attitudes toward being known and admitting conflict; and -- quite important -- that there may be for boys and girls different modalities through which the self is characteristically put forward in strength.

What about the temperamental qualities the children ascribe to themselves? Our data here are not extensive, but in the self-scaling technique each child was asked whether he tended toward active games or quiet play, toward enthusiastic or controlled reactions, toward working alone or in a group. Perhaps surprisingly, there were no significant sex differences in the pattern that emerged. But in thinking about what kind of people they are and presenting material about this -- the formal qualities rather than content ideas -- the boys and girls are different. In writing letters about themselves and their lives, girls tend to cover more facets ($p < .05$), to include somewhat more qualities that are not sheer description, and to be more personalized in their general handling ($p < .05$). In the self-scaling technique, they tend more to consider each aspect separately and to differentiate among them more ($p < .10$). All of this, as noted before, seems to denote a more differentiated style of thought about oneself.

In the area of self awareness, contact with and acknowledgement of inner processes, our direct data are not very clear. The material already presented would certainly suggest that the girls are more in touch with such processes, since they give and acknowledge more, explore more from personal and fantasy realms, etc. When we go directly to tap self awareness, however, asking the children to introspect about feelings of pleasure, anger, embarassment, etc. and to acknowledge and tell about daydreams, there are no statistically significant sex differences, though girls do acknowledge daydreams somewhat

more, and the most blocked and resistant children tend to be boys.

Of particular interest in the area of inner processes and impulse expression is the always difficult constellation of anger and aggression. Here we have some evidence that, whether or not there is a differential level of internal pressure -- a moot point -- there is at any rate a different kind and level of resolution and management among the boys and the girls.

In the play sessions, the incidence of aggressive-destructive themes ($p < .01$) and the use of aggressive figures ($p < .01$) is far higher among boys than girls. In the CPST stories, the boys in general project more direct and violent aggression, more scenes of fighting and bodily harm. They project also more defiance of authority, more situations where discipline is called for or invoked. Though the girls tend more to fantasies in which a child can express divergent opinions directly to an adult, it is only among the boys that opposition which is tense, forceful, and bent on voctory is expressed by child figures.

Perhaps it is of interest to note also a finding of a different order which seems relevant to this constellation. On the drawings, it is the boys who tend more to draw figures with qualities of movement ($p < .05$). This is not a frequent phenomenon in the general sample, but when it occurs it is more characteristic of boys. Perhaps it is a function of a greater basic vigor, tension, restlessness in the young male animal, somewhat in contrast to a generally quieter, more motor controlled quality in girls, and which needs to be expressed and dealt with in some way.

When we look at our measures of attitudes toward anger -- derived from direct questioning and from the Stick-Figure Scale -- we find that this group of nine-year-olds in general places high value on the control of anger. The boys and girls are not different in their concern for the control of anger, perhaps because it is of general concern to both, though the sense of pressure

may be experientially different and the ways of handling anger distinct. Again, however, it is among the boys that the extreme cases of expressed concern over anger appear.

It would be far beyond the bounds of this paper to discuss our findings in the context of the vast literature dealing with aggressive drive, the mechanisms of defense and the general management of impulse. In general and at a survey level, however, our findings seem syntonic with much of the theory and research that considers both basic drive and the complexities of society's attitudes toward the expression of anger in general and the tolerance and sanctions for boys and girls in particular. Our findings suggest that body tension and vigor may be greater among the boys; that among boys there is greater involvement in, or expression of, violent, forceful, directly aggressive fantasies; that control of anger is a prevalent value; and that boys and girls do not differ clearly in their expressed concern over controlling anger, though the most extreme and graphic expression of such problems is among the boys.

Now let me turn to a different constellation, still within the area of the attitudes and feelings of the developing individual.

What about the self-perspective across time -- the attitudes of the boys and girls toward their own past, present and future? We approached this rather directly in two ways -- asking the children in interviews what they thought was the best age to be, and in the scaling technique, whether it will be "wonderful to be all grown up" or was it "really best to be a little kid." We also rated responses on other techniques which indirectly indicated an orientation toward relatively childlike or adult behavior. There is a general tendency for more of the girls to look ahead to future stages. In the scaling technique, the group in general tends to prefer earlier stages, thinks it's better to be little, but this is significantly more characteristic of boys

($p < .05$) with more of the girls tending to choose the grown up stage. Material from the interview question supports this finding. Though the difference in average age chosen is not statistically significant, the modal response is clearly distinct: for boys the most frequent choice is the current age -- 9 to 10; for girls the most frequent choice looks ahead to the teens.

When we rated the adult or childlike quality of response to a hypothetical invitation to spend a million dollars, there were no significant sex differences. However, when we looked to the story telling fantasies (CPST) for indications of an interest in older social-sex roles (marriage, dating, having babies, etc.), we did find a significant difference. This kind of theme was not yet prevalent in the total group, but occurred with greater frequency, certainly among the girls than among the boys ($p < .01$).

In general, then, preference and orientation toward different life stages overlaps but is not equivalent for the sexes. There is a greater valence toward the future among girls, seen partly through fantasies concerning teen age or adult social sex roles. I will return to discuss this a little further, in connection with the finding that this orientation among girls appears in some of the school groups, but not others.

As a last but highly important aspect of self-image and feeling, let me report further findings concerning feelings of sex membership, and concepts of male and female social-sex roles.

To begin with, <u>affirmation of sex membership</u> is strong, in general, for both boys and girls. Asked in interview about the best sex to be, 85 per cent of the children choose their own sex; choice of one's own sex on the self-scaling technique is also a clear group finding, and in drawing, the drawings of one's own sex and of the opposite sex tend to be done either with equal

force or with preference to the child's own sex.

Where our data show evidence of questioning and exploration, however, it tends to occur more among girls. More girls are ambivalent or choose the opposite sex on the interview, and the boys are significantly more committed to their own sex on the scaling technique ($p < .05$), more favorable toward their own sex on relevant sentence completion items ($p < .05$).

There is evidence of considerable sex-typing in responses to several of the techniques; this is prevalent in the group, though it is more characteristic of boys in some senses, of girls in others. In the interview, the reasons for preferring one's own sex were, for both boys and girls, based on the positive advantages of one's own sex rather than on disparagement of the other, and carried in general a not surprising vision of what those advantages are: the boys talked of strength, prowess, competence; the girls of being attractive, well dressed, sometimes of the advantages of their protected adult role. Interestingly enough, where responses dwelt on what was wrong with the opposite sex role, they stressed the negative side of these same aspects -- the boys expressing a distaste for feminine adornment, female timidity, the dullness of women's chores, while the girls rejected masculine roughness and the responsibility of the adult male role. In the play session, the play of the boys is significantly more sex-typed than the girls' ($p < .01$). In the CPST stories, however, as has been noted, it is among the girls that a particular kind of precocious or romantic fantasy concerned with older social-sex roles tends to occur.

In general, then, we have evidence of rather strong affirmation of sex membership in this age group, and considerable evidence of rather classic sex-typing in concepts and attitudes. The affirmation and the sex-typing are stronger in the boys of the group than the girls -- though it is among the girls that we see the particular evidence of relatively adult social-sex fantasies. These

generalizations hold true on an overall level, for the boys and girls of this sample. This is a facet of development, however, where the interaction of school atmosphere and sex membership seems especially strong, and I will discuss it again in this context.

I want first, however, to deal with the constellation of perceptions and feelings about people.

Here there is a strong sex difference on a very general and important level, perhaps already suggested earlier in the paper. People seem to be more central in the lives and fantasies of the girls, to occupy more of their life space, to draw more of their energy and interest. When they tell stories (CPST), they populate them with far more people of their own invention than the boys do ($p < .01$); even the number of human or human-like responses on the Rorschach is greater among girls, though not significantly so.

The girls also tend toward more individuation and differentiation in their perception and projection of people. In the play sessions they project their fantasies more through central, individual figures ($p < .01$) and they differentiate the characters more ($p < .01$). Of the relatively small group of children who build some of their CPST stories around important qualities of people -- around characteristics or internal qualities that influence the course of events -- almost all are girls. In general, our data suggest that in their way of perceiving and thinking about people, including themselves, the girls of this sample are more involved, go deeper, are more differentiated.

The general finding that girls are more centrally involved with people is relatively time honored, through both observation and research. It has been coupled often with findings that girls are more global and undifferentiated in their perceptions and ways of thought, most recently perhaps by Witkin and his collaborators (16). Yet we find consistent indications of greater

differentiation on the part of the girls in our sample. Perhaps some of our findings are different, and perhaps we have given a different status to different areas of strength. Witkin has pointed out that in various research studies (2, 16, 17), women do appear to have a more articulated perception regarding others, are more visually oriented to the human environment and less to the physical environment than males, are more attentive to facial characteristics, expressions, attitudes. He suggests that this is so because women, with a less developed sense of identity and a greater dependence on others for support, guidance and evaluation, must be therefore especially alert to the attitudes of others. I think there may be much truth in some of the theories that link alertness to people with the early identification situation for girls (7) and the dependence on the human environment which the general culture does reinforce more for girls, but perhaps it is hasty to dispose of this orientation as "needed" for guidance and self-definition and thus in a sense actually less differentiated -- or at least unimportant in comparison to the findings that men are differentiated in other ways. In our data, we find that the articulation concerning people is not always surface or other-directed, but seems to go hand in hand, for some of the group at least, with an attention to qualities that are quite internal and deep, in child terms, and with a more differentiated perception and image of the self as well. I would like to suggest that this is a rather important finding. Whatever the original base, an alertness and articulation in the interpersonal sphere is healthy and important -- an orientation to be valued and encouraged. Furthermore the increasing differentiation and clarity that it denotes may be as useful in the development of general perceptual-cognitive skill as the more clearly "intellectual" problem-solving differentiation often found to be typical of males, though the line of development is different in content and quality. We are again concerned with the question of whether

essential sex differences may not lie less in differential capacities than in the modalities through which capacities develop and are expressed, as well as in asking whether the various strengths and modalities are inevitably sex-linked and mutually exclusive.

Let me review now the remainder of our findings concerning general sex differences in the interpersonal area.

Family matters appear to concern the girls more; they have a far greater tendency to include family figures in their play and to project family themes ($p < .01$), though in their CPST stories their introduction of parent figures is not significantly greater.

The girls and boys also seem, in general, to have different attitudes and expectations concerning adult behavior toward children. In their story telling (CPST) the girls tend more to project benevolent adults, stressing more often than the boys the supportive, nurturing, affectionate aspects of adult behavior rather than the socializing, non-available, disapproving aspects ($p < .01$). Though the findings are not statistically significant, there is some indication, also through projections, that the girls find adults more generally approachable, and -- this at significant levels ($p < .05$) -- that they more often project child figures in fantasy who express disagreement directly to an adult, though, as has been noted, this never has the fierce and forceful quality of the boys' projected opposition.

From a series of techniques (Sentence Completion, Interview, Dictated Letter, CPST) an estimate was made of attitudes toward authoritative adults in the school context. Each child's attitude toward school authority was categorized as "rebellious," "resentful," "conforming" or "rational." There were no overall sex differences in this. We did find sex differences, however, at a suggestive level, in evidence concerning <u>fear</u> of authority (a separate rating),

and in the broader constellation of attitudes in which this fear appears. The presence of fear was rated when a child perceived an authority figure, such as the principal, as frightening or anxiety producing. There is some indication that this response is more typical of girls (35 per cent girls, 26 per cent boys), and that the typical modal constellation, when fear is expressed, is resentment and fear for boys (50 per cent), conformity and fear for girls (65 per cent). The numbers involved are small but the data are supportive of other indicators that boys and girls may meet their anger and fear differently, with girls tending to suppress and deny more effectively and perhaps more urgently.

In general, however, on whatever base of experience or need, the girls as a group project a world of adults in which they are more secure and expect more benevolent support and acceptance than the boys do.

In relations with peers, the findings are quite different. For both boys and girls, at this age, peer relationships represent a frontier -- conflictual, tense, very important. The certainty of popularity and acceptance with peers and across sexes appears to be relatively low for both boys and girls, but the boys seem to present, expect, and perhaps actually live within, a more privileged position.

In the self-scaling technique, where the children indicate their popularity with peers, this is the least confident and satisfied aspect of self-evaluation for both boys and girls. The boys nonetheless are significantly surer of their status than the girls ($p < .01$), very few of whom assert their confidence in being liked by other children (9 girls, 24 boys).

On the Sentence Completion items that have to do with boys' opinions of girls and girls' of boys, there is a general negativism toward the opposite sex. In what the children expect in return from the opposite sex, there is

again a general negative tone, but here the expectation is significantly more negative or the part of the girls ($p < .01$). If we paraphrase the essence of the data from the Sentence Completion items, the girls seem to be saying, "We don't like them much, and we expect they don't like us either." The boys seem to be saying, "Though we don't like them so much, we expect that they like and admire us better than we like them."

Evidence from the sociometric technique is, in fact, supportive of the boys' idea that they are more broadly accepted across sex lines. Though our sample is limited for this technique, it seems clear that there are many more instances when girls choose boys (63) than when boys choose girls (23). Some of this difference is logically accounted for by an item that concerns choices for a ball game, but certainly not all.

It should be noted that this constellation of peer attitudes across sexes is again related to schools.

I would like now to illustrate the thesis that there is a meaningful interaction between the quality of school experience and the differential development of boys and girls.

The pattern of findings about boys and girls on the techniques that measure achievement, intellectual competence and problem solving capacity, is not completely consistent in the various school groups. There is evidence suggesting that the girls of the modern schools handle the process of problem solving -- taking the roster as a whole -- at least as effectively as the boys, but that this is not true in the traditional schools. Actually, the most consistent incidence of sex differences in this area, favoring the boys, occurs in the most traditional school, which has the most traditional implicit concepts of what can and should be learned by boys and girls. Boys in this school are significantly

more effective than girls on intellectual performance ($p < .05$), on achievement ($p < .05$), and on the overall tendency to exploratory search in problem solving ($p < .05$), with special though not exclusive emphasis on the relatively sex-typed cylinder problem ($p < .05$). The number of study children in this school is small, and we take implications from this group with some caution, but they gain support from the fact that when we gave a group problem solving task (RSSR) to the entire classroom, it was only in this school that the active solution was carried through by an intense, competent, forceful group of boys, with the girls completely peripheral. The findings are not simply explained in terms of an overriding superiority in task handling and in all aspects of cognition, however. The boys of this school -- powerful and effective achievers and problem solvers both in comparison with the total sample and in comparison with the girls of their school group -- are <u>not</u> more productive than the girls on projective tests, not more imaginative in fantasy situations, neither personalized nor exploratory in situations where a free approach is both indicated and adaptive. Perhaps it captures the quality of this school group to note that the boys have the lowest tendency in the sample to acknowledge and discuss daydreaming and the girls of this group have the highest ($p < .02$). In a variety of ways, the discrepant capacities and investment of the boys and girls of this group seem more consistent with cultural stereotypes (6) than in the other groups -- power and competence, intellectual orientation, impersonal approach on the part of the boys; a less developed problem orientation and ability, a greater dependence, more elaborate and open fantasies on the part of the girls.

In the general area of productivity and responsiveness there is another constellation where the boy-girl difference in one school is particularly strong and interesting -- this time the modern private school. The productivity of the boys from this school is the lowest in every technique where we have

measured this factor; in addition they have the highest rate of rejection of items among the four groups of boys. The girls from this school also reject more items, on the average, than girls from the other schools, but they are also highly productive; on some techniques their productivity is the highest, and on none are they particularly low. It had been our general observation that the children of this modern private school came to the sessions with a more independent and less conforming attitude than the children from the other schools. It had seemed likely to us that this attitude was compounded of many things -- perhaps partly a disguised anxiety, partly a relative freedom to react in one's own terms. The facts I have just reported suggest that the compound may not be the same for the boys and girls. Since the girls can both reject items and produce fully, it seems plausible to consider the rejections selective; since the boys present a syndrome of rejection and restricted production, as well as other evidence that follows the same line (low imagination ratings, etc.), they raise the question of whether inhibition and uneasiness is not a stronger factor for them than self-propelled selectivity or a relative independence of authority.

When we look at the syndrome of attitudes toward the self and other people, the generalizations about girls seem in some senses to be particularly true about the girls from the more modern schools, in other senses most true of the girls from the traditional schools. The girls from all the groups are notably involved with people. The girls from the modern schools, however, give more recurrent evidence of a differentiated approach to the self and to others (differentiation ratings on Dictated Letter and Stick-Figure Scale; differentiated qualities of characters on CPST). On the other hand, generalizations about the involvement in family, and the perception of a more nurturant, benevolent adult world are least true of the girls from the most modern school;

in this respect, they are more like the boys of the sample and of their own school group in their expressed perceptions and attitudes. In all of this, though this summary passes over details and intricacies, there is a feeling that the girls in the modern schools -- most especially but not exclusively in the modern private school -- follow less the traditional roles, perceptions, reactions, defenses associated with girls. It is with the more traditionally educated girls that the flavor of dependence, protection, external orientation and sex-typed attitudes and skills is more apparent. We see this further in the fact that the girls from the modern private school, like the boys from their school, are notably less future-oriented than the other children. Certainly the fantasies of teen age or adult social sex patterns occur predominantly among the girls from the traditional schools.

In the various measures related to sex role definition and commitment, there is a suggestion that the traditional cultural images of maleness and femaleness are most clearly expressed by the children in traditional schools. The modern school children appear to have less mutually exclusive ideas of what male and female lives are like, though they have not necessarily built strong substitute images. Perhaps this is most true of the girls in the modern private school, who give the most consistent evidence of uncertainty and exploration. (It might be noted that the roster of hypotheses in this study predicted both the strong boundaries between masculine and feminine social-sex roles on the part of the traditionally schooled children, and the conflict and difficulty surrounding the development of a satisfactory feminine role on the part of the girls from the modern private school.) Much of the ambivalence and exploration in direct choices of the best sex occurs among girls of the modern schools, and it is the group of girls from the most modern school who, contrary to the general trend, defend the choice of their own sex on interview somewhat more through

stated disadvantages of the opposite sex than through positive reasons for choosing their own -- as if the specific content of their own social-sex image is hazy.

The more complete incorporation of traditional images by children of the traditional schools is seen in several ways: In the interviews, for instance, it is only traditional boys who contribute images of female lives as dull and uninteresting, only the traditional girls who project female advantages in terms of attractiveness, clothes, daintiness -- an image that does not appear directly in the reasons given by modern school girls at all. Perhaps one of the most graphic illustrations, however, comes from the self-scaling technique (Stick-Figure Scale) where we asked the child what kind of opposite sex child he likes. Here there was a statistically significant school by sex interaction ($p < .05$). The traditionally schooled girls more consistently prefer the All-American, energetic athletic boy; the girls from the modern schools value this image less consistently, are more tolerant of mixtures and of the boy who is ingoing, has some intellectual or individualized interests. The traditional school boys have some interest in the sweet, shy, nicely presented girl; though they do not predominantly choose her, they are certainly more interested than the modern school boys. The latter choose "pals" and reject the decorative girls. Actually no boy from the modern private school indicates a preference for the sweet and clothes-conscious girl. The children from the traditional school may be in a sense more precocious in their interests. They are also, however, certainly more influenced by the broad cultural stereotypes of desirable male and female qualities.

Perhaps it is a concomitant of this syndrome that the affective attitudes toward the opposite sex seem most sharply antagonistic in the most modern school (a fact we did not predict!), less so in the traditional schools. Only in the

most modern school are there no cross-sex choices on the sociometric, while it is in one of the traditional schools that the choice across sexes is most fluid. Likewise, attitudes to the opposite sex on the Sentence Completion items are significantly more negative in the modern private school than in the most traditional school ($p < .05$). In this most traditional school group, neither the antagonism nor the expectation of antagonism is as strong as elsewhere. The data suggest that strict and mutually exclusive boundaries in the images of male and female are strongest in the children of the traditional schools, but affective boundaries may be strictest, at this stage of development, in the children of the modern private school. The greater resolution and clarity for the traditional groups may give their interaction a pre-ordained path and may make it relatively less conflictual. The confusion and conflict attendant on the more open situation in the modern school group may make the affective boundaries stronger, attitudes and expectations more antagonistic.

In general: We have found a roster of differences between the boys and girls of this study sample. These are probably rooted in biological factors, in patterns of upbringing and early relationships, in the values and expectations of the broad culture, as transmitted to children. Many of these are overriding tendencies that would generally characterize middle class boys and girls of this culture.

It is clear, however, that "culture" is not an undifferentiated mass, that the child lives within many subcultures -- his parents, his siblings, his peer group, his religion, his school. Among the schools, it is the modern schools which have tended to make fewer assumptions that skills, qualities, orientations traditionally considered sex-linked and sex-appropriate are necessarily so, and this has apparently had definite effects -- sometimes in

the direction of a richness in development as the consequence of less compelling boundaries, sometimes in the direction of lesser integrations and new problems, different in quality for boys and girls.

Our data generally suggest that the nature of the experience offered by distinct school cultures to the growing boy and girl makes a considerable difference in development, and this appears to be a finding of central importance -- important for the evolution of optimal educational processes, and important in the psychologist's continuing search toward understanding the roots, nature and implications of sex differences.

PM/whh
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